Task Order No.: **Task Order 78**
Contract No.: EP-C-08-007
Project Officer: Lauren Drees
Task Order Project Officer: Steve Vandegrift
Contract PWS Task: Task Four - Quality Studies

Period of Performance: One year from date of issue

1.0 TASK ORDER TITLE

QA Support for the Pavillion Ground Water Investigation Research Effort

2.0 BACKGROUND/OBJECTIVES

The NRMRL quality assurance (QA) staff has regularly reoccurring requirements for the conduct of reviews of environmental data for accuracy and appropriateness in support of the Pavillion Groundwater Investigation Research Effort. Paragraph B.3 of the subject contract, "Fixed Rates for Services," provides fixed rates for Task 4 activities.

4.0 TASK DESCRIPTION

The contractor shall provide all facilities and personnel to provide the following Task 4 activities in conformity within the scope of the performance statement of work:

1 - Audit of Data Quality (ADQ) for data generated as part of the Pavillion ground water study. The ADQ shall be performed as described in the NRMRL SOP LSAS-QA-02-0, *Performing Audits of Data Quality*, which is attached to this PWS as Attachment 1. The ADQ will include the review of data package for the following parameters: semivolatiles by GC/MS, volatiles by GC/MS (from two different labs), metals, anions, dissolved inorganic and organic carbon, DRO (Diesel Range Organics) by GC, GRO (Gasoline Range Organics)by GC, dissolved gases by GC, stable oxygen and hydrogen isotope ratios of water, low molecular weight acids by HPLC, stable carbon isotope ratio of dissolved inorganic carbon, stable carbon and hydrogen isotope ratios of dissolved methane, tritium, MBAS (Methylene Blue Active Substances), glycols by LC/MS/MS, ethoxylated alcohols and alkylphenols by LC/MS/MS, acrylamide by LC/MS/MS, and methanol, ethylene glycol, propylene glycol by GC/FID. Data package is from one sampling event which will include up to 15 sampling points (samples).

The contractor shall provide a report, as specified in Attachment 1, within 30 days of receipt of the consolidated data package. Each deliverable transmission shall include an electronic letter of transmittal providing:

a) Identification of the activity utilizing the unique EPA-supplied ID number, the Task Order number, and the technical directive number.
b) Prime contractor representative responsible for the deliverable.
c) Any additional comments not included in the deliverable that the contractor would share with EPA regarding either the process or substance of the deliverable.

Deliverables shall be accepted based upon the following criteria:

a) Correct punctuation and syntax

b) Provided in correct format

c) Deliverables are delivered electronically on or before the Delivery Date.

d) Conflict of Interest (COI) documentation has been fully completed and received.

The TOPO or PO will notify the contractor within ten (10) working days regarding the approval of the deliverable. If the deliverable is not approved, the TOPO or PO shall provide a written explanation of any defect in the deliverable.

The TOPO or PO, at their discretion, may elect to approve a work product where all approval criteria were not met. In those cases, the TOPO or PO shall provide notification to the contractor of any defect in the deliverable.

5. Miscellaneous

All Software Application files, if delivered to the Government, shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems. Accordingly, all documents shall be submitted in Microsoft Office 2007 or higher, both Microsoft Word and Microsoft Excel. Documents may also be submitted in Adobe Acrobat, version 9 or higher.

The Quality Assurance Surveillance Plan (QASP), Attachment 2 of the contract, is incorporated herein here by reference.

PWS Attachment 1

SOP: LSAS-QA-02-0

TITLE: Performing Audits of Data Quality (ADQs)

1.0 Purpose

ADQs are used to verify that reported data are of acceptable quality for their intended use. The ADQ is an examination of data after they have been collected and verified by project personnel. It is conducted to determine how well the measurement system performed with respect to the data quality indicator (DQI) goals specified in the QA project plan (QAPP) and whether the data were accumulated, transferred, reduced, calculated, summarized, and reported correctly. This procedure describes the process used to perform and document ADQs in support of NRMRL research activities.

2.0 Revision History

History of document changes

Date	Revision No.	Change	Ref. Section
05/19/10	0	New Procedure	Not Applicable

3.0 Persons Affected

This SOP applies to QA Managers (or designees) who perform ADQs and Technical Lead Persons (TLPs) who have data subjected to ADQs.

4.0 Policy

The NRMRL Quality Management Plan (QMP) requires that ADQs be performed by the QA Manager (or designee) for all QA Category 1 and 2 research projects. ADQs may also be performed for QA Category 3 and 4 research projects when specifically requested by management, when dictated by program requirements, or as determined to be necessary by the TLP or QA Manager. ADQs are performed by QA Managers or their designees.

5.0 Definitions

5.1 Audit of Data Quality (ADQ) - a qualitative and quantitative evaluation of the documentation and procedures associated with environmental measurements to verify that the reported data are of acceptable quality for their intended use.

5.2 Data Quality Indicators - quantitative statistics and qualitative descriptors that are used to interpret the degree of acceptability or utility of data to the user. The principal data quality indicators are precision, accuracy, comparability, completeness, and representativeness.

5.3 Technical Lead Person (TLP) – the NRMRL employee who is responsible for all technical aspects of a research project. For extramural projects, the Contracting Officer Representative (COR) or Project Officer (PO) is the TLP.

5.4 Deficiency – an identified deviation that impacts the quality of the reported results.

5.5 Finding – a deficiency that has a significant effect on the quality of the reported results.

5.6 Observation - a deficiency that does not have a significant effect on the quality of the reported results.

6.0 Procedures

6.1 The need for an ADQ is identified early in the project planning process based on the QA category; ADQs are required for QA Category 1 and 2 projects. (The requirement for an ADQ and associated responsibilities must be included in the quality assurance project plan (QAPP) for these projects.) Other projects may be identified as needing an ADQ (see Section 4.0) early in the project planning process or at some other time during project implementation. When the need for an ADQ is identified, the TLP must coordinate audit activities with the QA Manager.

6.2 The TLP notifies the QA Manager when data packages that have already been verified by project personnel are available (if possible, advance notice should be given). The NRMRL QMP requires that a percentage of data sets (or packages) for a project be subjected to ADQs, based on the QA category for the project. For some projects, minimal data packages may be generated, while other projects may generate multiple data packages. The identification of specific data packages for review is made by the QA Manager to focus on the more critical parameters and to provide the best representation of the data generated. The QA Manager may use discretion in the review process as to how to meet the requirements for the percent of data sets reviewed for a specific project.

Note: ADQs must begin as soon as possible after data generation begins (when initial data packages and data summaries are available) to ensure that any problems are identified and resolved in a timely manner. ADQs must then continue throughout a project as determined to be appropriate by the QA Manager.

6.3 The TLP provides summaries of results for reporting and complete project data packages to the QA Manager. In the case of extramural support, the need for this documentation must be identified in the procurement documentation. A complete data package consists of the following:

6.3.1 Sample information: a list of each sample by unique number; date of sampling; method of sampling; analysis required for each sample; matrix/preservation; chain of custody documentation, if applicable.

6.3.2 Method information: identification of reference method(s) or laboratory SOPs used, including sample preparation if applicable; any modifications to the stated methods.

6.3.3 Summary of results: sample results for reporting; reporting units; reporting basis (e.g. dry weight); reporting limits; QC results (e.g., blanks, surrogates, spikes, replicates).

6.3.4 Raw data: dates of sample preparation and analysis, sample preparation initial and final masses/volumes; raw data including sample analysis sheets, logs, copies of laboratory notebooks, or raw data from instrumentation; instrument checks; calibration documentation; and calculations and/or spreadsheets used to reduce data.

6.3.5 Data Qualifiers: any problems or issues with receipt, storage, handling, or analysis of samples including resolution; deviations from project/method requirements; QC requirements not met; impact to reported results.

Note: If any of the above is not provided for review, the QA Manager must evaluate the impact of the missing information on performing the ADQ. If necessary, the QA Manager will inform the TLP of the need for the missing information.

6.4 The QA Manager or designee prepares a checklist based on the type of data generated, such as the example checklist provided in Attachment 1 for measurement projects (additional items for review may be needed depending on the data being reviewed or a different checklist may be needed for non-measurement project types). The QAPP or other planning documents will be needed to identify data quality indicator requirements and goals. Multiple sections to the checklist may be needed if the data involves multiple sample matrices/analyte classes (e.g., air samples for metals, water samples for VOCs).

6.5 The QA Manager reviews the data packages(s) against the checklist. A representative set of the data is traced in detail from raw data and instrument readouts through data transcription or transference through data manipulation (either manually or electronically by commercial or customized software) through data reduction to summary data, data calculations, and final reported data.

Particular attention is paid to the use of QC data in evaluating and reporting.

Note: For each data package reviewed, all calibration and QA/QC data must be reviewed. In addition, a percentage of input values for software program-generated calculations and hand calculations must be verified, as determined to be appropriate by the QA Manager. If problems are identified, additional verification is needed.

6.6 The QA Manager identifies deficiencies if present, and designates them as findings or observations.

6.7 The QA Manager documents the results of the ADQ in a report. The draft report must included the following at a minimum:

- **Introduction** to include audit information (e.g., TLP, project title, laboratory (organization), data package identifications, sample matrices/analyte classes, date, QA reviewer);
- **Summary** of findings and observations and a summary statement regarding the adequacy of the data for its intended use;
- **Individual finding/observation discussions** including a description of the deficiency and any effect on data quality and the recommended corrective action.

6.8 The QA Manager shall distribute the report to the TLP and the TLP's supervisor.

6.9 If the audit report contains findings, the TLP must respond in writing to the QA Manager (with a copy to the TLP's supervisor) with a plan for corrective actions. If the audit report contains observations only, the TLP is strongly encouraged to address the issues and provide a documented response to the QA Manager, but no additional QA review is needed.

6.10 For ADQ findings, the QA Manager reviews the ADQ corrective actions and provides documentation to the TLP and the appropriate supervisor regarding the acceptability of these corrective actions. The results cannot be used or reported until any needed corrective actions are determined to be acceptable.

6.11 Any required revisions to reported results must be made and submitted to the QA Manager for verification prior to the use or reporting of the results.

6.12 The TLP must maintain the ADQ report and any responses in the project files. The QA Manager must maintain the ADQ report and any responses in the QA files.

7.0 References

7.1 EPA QA/G-7, Guidance on Technical Audits and Related Assessments for Environmental Data Operations, EPA/600/R-99/080, January 2000

7.2 NRMRL Quality Management Plan, current edition

Prepared by: ETAVOS/MH
LSAS/LMD

ATTACHMENT 1

EXAMPLE ADQ CHECKLIST

GENERAL INFORMATION

EPA Technical Lead Person (TLP):
Project Title:
Laboratory (Organization):
Report Identification/Date:
Sample Type(s)/Analyte(s):
QA Reviewer: ADQ Date:

ITEMS REVIEWED

	Yes	No	NA	Comments
Sample Information				
Are samples uniquely identified and correctly transcribed throughout the data package to the summary of results?				
Does sample collection documentation indicate that samples were collected as described in the QAPP?				
If calculations were used for sample collection information (e.g., air volumes), are these calculations correct?				
Does sample collection documentation indicate appropriate preservation?				
If applicable, is chain-of-custody documentation complete?				
Sampling and Analysis Method Information				
Were methods specified in QAPP used?				
If method modifications were used, are these modifications appropriate and well documented?				
Were sample preparation and analytical method holding times met?				

Summary Of Results				
Are the correct units reported?				
Are reported results correct (verify any calculations performed[1])?				
Were QC samples (blanks, second source checks, surrogates, spikes, replicates) analyzed at the frequency specified in the QAPP?				
Did QC results meet the requirements specified in the QAPP?				
Raw Data				
Were instruments calibrated as described in the QAPP?				
Were calibration criteria met for initial and continuing checks?				
Were reported results analyzed within calibration range?				
Were instrument outputs correctly transcribed to data summary?				
Data Qualifiers				
If QC requirements were not met, were corrective actions performed?				
If necessary, were data qualified appropriately?				

[1]A percentage of input values for software program-generated calculations and hand calculations must be verified, as determined to be appropriate by the QA Manager. If problems are identified, additional verification is need